

## REMARKS

Claims 1-8 are pending in the application and rejected. Claims 9-23 have been canceled without prejudice and Applicants reserve their right to prosecute subject matter of canceled claims in subsequent applications.

Claim 1 has been amended to recite a method for detecting and quantifying polynucleotide fragments in a population of polynucleotides comprising:

- (a) reverse transcribing an RNA population to provide a double-stranded cDNA population;
- (b) digesting said cDNA population with one or more restriction endonucleases having a degenerate recognition or cleavage sequence, wherein said restriction endonuclease is a three- to eight-base cutter and wherein the degenerate recognition or cleavage sequence is represented by the formula of  $N^m$ , where N is the extent of degeneracy, and m is the number of degenerate bases, and wherein for at least one of said restriction endonucleases N is 2-4 and m is 1-5, to produce restriction fragments having  $N^m$  different single-stranded overhangs for each restriction endonuclease;
- (c) ligating said restriction fragments to a series of adapters lacking restriction endonuclease sites, each adapter having a sequence complementary to one of said overhangs such that restriction fragments having identical overhangs are ligated to the same adapter;
- (d) amplifying said restriction fragments for no more than 25 cycles with a primer comprising a detectable label; and
- (e) detecting and quantifying said polynucleotide fragments. Support for these amendments is in the specification on page 8, lines 6-7 and claims .

No new matter has been added by these amendments.

## Previous Response to Arguments

The Office Action notes on page 2 that the responses to the office action of May 21, 2003 were considered and found persuasive. The Office Action of January 27, 2004 notes that the Rejection of Provisional obviousness-type double patenting of claims 1-10 and 15-21 are moot in view of the new grounds of rejections. Also that the Applicant's arguments against the Rejection of provisional obviousness-type double patenting with respect to claims 1-13 and 15-21 are moot in view of the new grounds of rejections.

Applicants respectfully request the Examiner to also explain if the obviousness rejection of claims 1-13 and 15-21 over Goldsborough in view of Warthoe has been withdrawn as well.

### **Claim Rejections under 35 USC § 102**

A. Claims 1, 3-8 and 15 are rejected under 35 USC § 102(b) as being allegedly anticipated by Kato (US Patent 5,707,807).

Applicants respectfully disagree with this rejection.

The legal test for anticipation under 35 U.S.C. § 102 requires that each and every element of the claimed invention be disclosed in a prior art reference in a manner sufficient to enable one skilled in the art to reduce the invention to practice, thus placing the public in possession of the invention. W.L. Gore Assoc. v. Garlock, Inc., 721 F.2d 1540, 1554 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1994); In re Donohue, 766 F.2d 531 (Fed. Cir. 1985). Anticipation under 35 U.S.C. § 102 requires identity of invention. Scripps Clinical & Research Fdn. v. Genentech, Inc., 927 F.2d 1565 (Fed. Cir. 1991).

The presently claimed invention are methods for detecting and quantifying the nucleic acid molecules. Kato does not describe the quantification of the molecules. Since Kato does not describe each and every element of the claimed invention, it does not anticipate the presently claimed invention.

B. Claims 1, 3-8 and 15 are rejected under 35 USC §102(b) as allegedly being anticipated by MacLeod et al. (US Patent 6,221,600).

Applicants respectfully disagree with this rejection.

MacLeod does not describe the use of degenerate restriction endonucleases as presently claimed. Since MacLeod does not describe each and every element of the amended claims, MacLeod does not anticipate the presently claimed invention.

### **Claim Rejections 35 USC § 103**

Claims 9-13 and 15-21 are rejected under 35 USC § 103 (a) as allegedly being unpatentable over MacLeod et al. (US 6,221,600) in view of McCasky Feazel et al (US 6,100,030). In particular, the Office Action contends that it would have been obvious for a person of ordinary skill to combine the method of amplification as taught by MacLeod with the method of McCasky Feazel to screen for polymorphisms because McCasky Feazel allegedly teaches the method that would allow analysis of complex data and provide more DNA polymorphism data in less time and at lower cost.

Applicants respectfully disagree. However, to advance prosecution of certain embodiments of the invention, claims 9-13 and 15-21 have been cancelled without prejudice. Therefore, this rejection is moot.

**Conclusion**

The above remarks and amendments put the claims in form for allowance. If the Examiner has any questions or comments, please contact the attorney for Applicants below.

Respectfully submitted,

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- 1) Response and Amendment Under 37 CFR § 1.111 (5 pages total)
- 2) Petition for Extension of Time
- 3) Credit Card Payment Form
- 4) Return Postcard

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